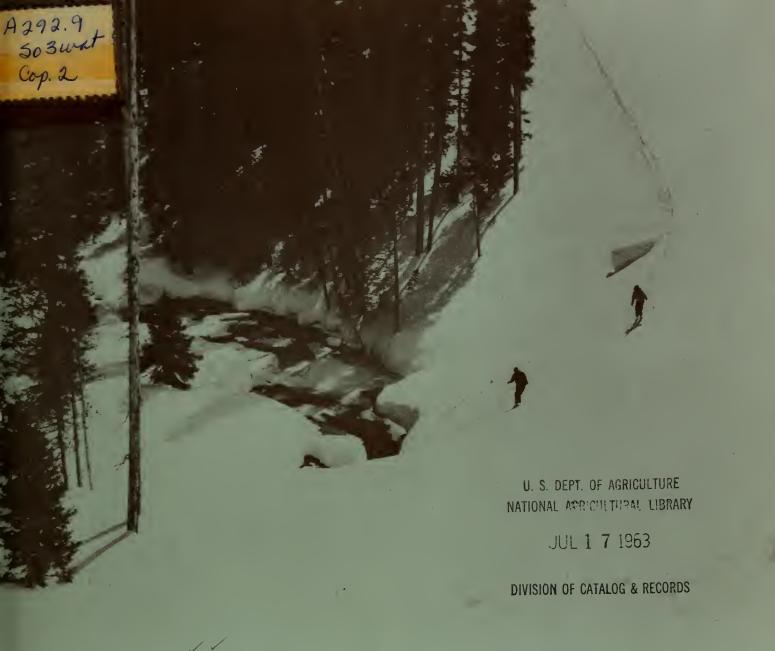
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Do not assume content reflects current scientific knowledge, policies, or practices.





WATER SUPPLY OUTLOOK

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

for
IDAHO

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE, and

IDAHO STATE RECLAMATION ENGINEER

Data included in this report were obtained by the agency named above in cooperation with the Comptroller of Water Rights of British Columbia, and Federal, State and private organizations listed on the last page of this report.

JAN. 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
WESTERN UNITED STATES	_ MONTHLY (FEBMAY)_	PORTLAND, OREGON	_ ALL COOPERATORS
STATES			
ALASKA	_ MONTHLY (MAR MAY)	PALMER, ALASKA	_ ALASKA S.C.D.
AR I ZON A	SEMI-MONTHLY(JAN.15 - APR.1)	PHOENIX, ARIZONA	_ SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEBMAY)	FORT COLLINS, COLORADO_	— COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	_ MONTHLY (JAN JUNE).	BOISE, IDAHO	_ IDAHO STATE RECLAMATION ENGINEER
MONTANA	_ MONTHLY (JAN JUNE).	BOZEMAN, MONTANA	_ MONT. AGR. EXP. STATION
NEVADA	_ MONTHLY (JANMAY)_	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
ORE GON	_ MONTHLY (JANJUNE)_	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	_ MONTHLY (JAN JUNE).	_ SALT LAKE CITY, UTAH	_ UTAH STATE ENGINEER
WASHINGTON	_ MONTHLY (FEB JUNE)	SPOKANE, WASHINGTON	_ WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEBJUNE)	CASPER, WYOMING	_ WYOMING STATE ENGINEER
	PUBLISHED (BY OTHER AGENCIES	
REPORTS	ISSUED		AGENCY
BRITISH COLUMBIA	MONTHLY (FEBJUNE)_	WATER RIGHTS BR NATURAL RESOURCE B.C., CANADA	., DEPT. OF LANDS, FORESTS AND ES, PARLIAMENT BLDG., VICTORIA,
CALIFORNIA	MONTHLY (FEBMAY)	CALIF. DEPT. OF	WATER RESOURCES, P.O. Box 388,

SACRAMENTO, CALIF.

WATER SUPPLY OUTLOOK

rederal - State - Private Cooperative Snow Surveys

for

IDAHO

Report prepared by

MORLAN W. NELSON Snow Survey Supervisor

and

J. ALDEN WILSON Asst. Snow Survey Supervisor

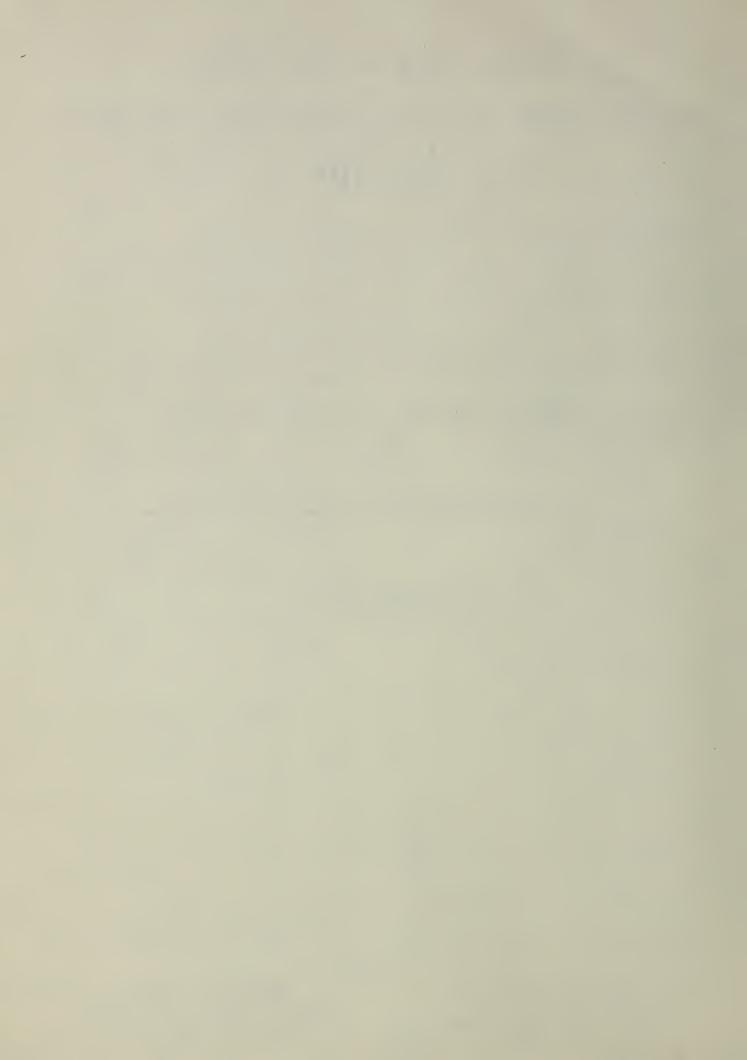
SOIL CONSERVATION SERVICE SNOW SURVEY SECTION BOX 1247, BOISE, IDAHO

Issued by

LEE T. MORGAN

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
BOISE. IDAHO

GEORGE N. CARTER
STATE RECLAMATION ENGINEER
DEPARTMENT OF RECLAMATION
BOISE, IDAHO



WATER SUPPLY OUTLOOK for IDAHO 206118









GENERAL SUMMARY - JANUARY 1, 1963

The light snow pack so far in 1963 indicates a low water supply outlook for the entire State of Idaho. Carry-over storage on the Snake, Boise, and Payette Rivers is excellent and can make up for deficient streamflow. On many of the small rivers with limited storage facilities, the outlook is for well below normal water supplies. Precipitation and snowfall during the fall and early winter of this season was extremely light. Temperatures, high in the mountains, were warm for the month of December.

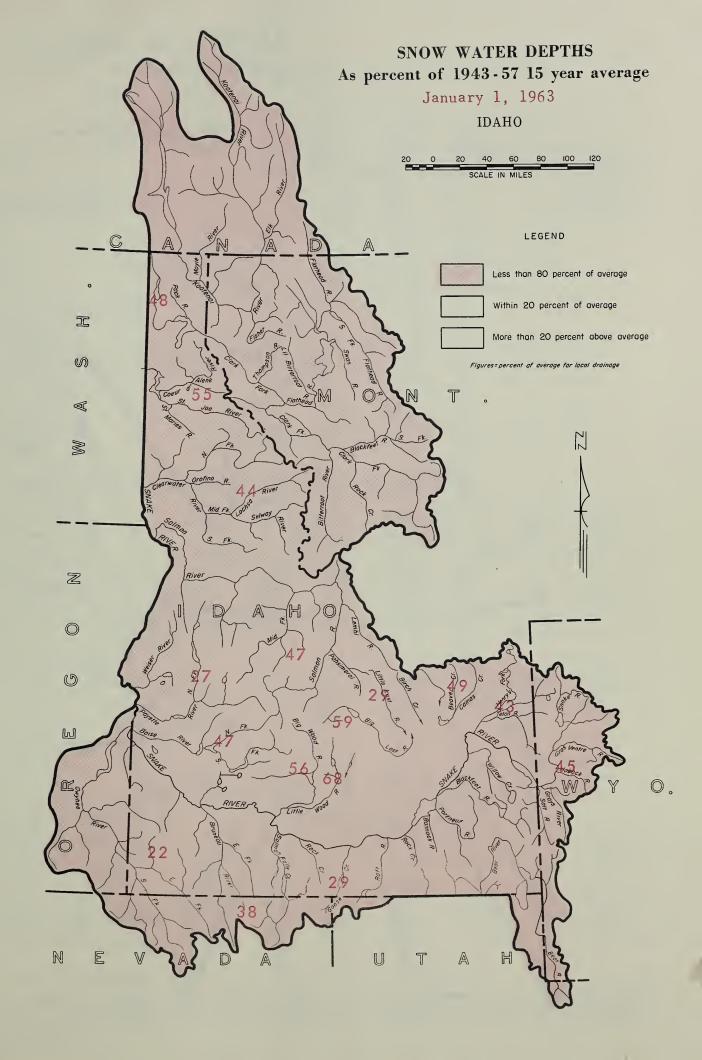
In average years, about one-third of the snow pack is down by January 1. With from 60% to 65% of the snow cover yet to fall, the water supply outlook could change considerably. Snowfall for the remainder of the winter will have to average from 150% to 160% of normal to produce average water supplies for this season. Such heavy snowfall is only remotely possible.

Generally speaking, snow cover at this time throughout Idaho is well below the 1961 or 1962 season. On some rivers, such as the headwaters of the Snake, it is slightly more than was measured in January of 1960 which was a year of low streamflow during the irrigation season.

Soil moisture conditions, as measured at key snow courses, indicate soil moisture beneath the snow pack is also below normal. This is particularly true at the higher elevations where it has the greatest affect in reducing runoff from the snow pack.

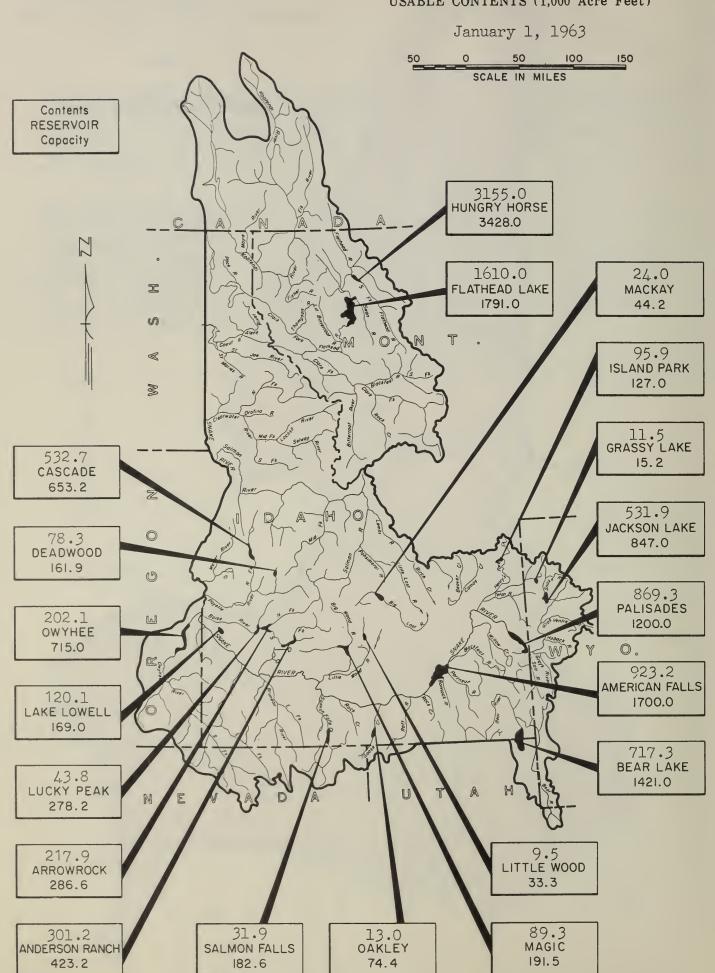
Eight of thirty-eight key snow courses throughout Idaho have the lightest snow pack on record. These courses are generally distributed throughout the state. There are several other snow courses on the headwaters of the Snake River in Wyoming with records ranging back to 1919 which are not the lowest but are comparable to the extremely dry years during the 1930's.

Snow cover, which ordinarily acts as a good insulator and prevents the soil from freezing, has not occurred so far this year. Light snow cover in the valley and lower mountain areas has resulted in frozen soil to greater than normal depths. This condition poses a special hazard when snowfall does occur if followed by warm rains. Under these conditions, the soil cannot absorb melting snow and rain water and, therefore, can produce high and damaging runoff such as occurred last winter in the vicinity of Idaho Falls and on the Portneuf River.



RESERVOIR STORAGE

USABLE CONTENTS (1,000 Acre Feet)



TOTAL SOIL MOISTURE 1/

Drainage		Soil	Profile			Winter	
Basin &	Elev.		Inches	Date		re (in	
Station		Depth	: Cap.		62-63	61-62	60-61
CLEARWATER RIVER							
Brown	3100	36	6.7	12/31	4.4	4.2*	94 W
Foh1	3450	48	13.3	12/31	8.6	8.0*	
Midway	2200	36	6.1	12/31	3.9	3.7*	
BOISE-PAYETTE RIVERS							
Bogus Basin	6120	48	13.1	12/31	7.3	4.7	6.1
Bogus Basin Road	4830	48	7.1	12/31	4.9	5.6	4.8
OWYHEE RIVER							
Mud Flat	5500	48	12.8	11/5	5.9	5.6	
Triangle	5150	60	16.2	11/5	12.0		
RAFT RIVER, GOOSE CREEK,	SALMON	FALLS	CREEK,	BRUNEAU R	IVER		
Padaam Culah	6660	36	7.0	12/27	5.2	5.1	
Badger Gulch Bear Creek	7800	72	16.8	10/31	7.0	8.7	8.6
Conner Pass	5700	36	9,8	12/31	5.6	6.4	
Deadline	6900	36	7.4	12/31	3.4	4.5	
Patrick Ranch	5720	36	7.7	12/28	3.1	3.1	3.2
Pole Creek R. S.	8330	48	12.7	12/28	6.4	8.4	5.2
Trapper Creek	5300	36	10.0	12/27	3.4	4.2	
LITTLE WOOD RIVER							
Garfield R. S.	6554	36	5.2	12/27	3.0	3.9	2.6
Niggerhead	5450	36	10.1	12/27	6.6	6.7	7.1
PORTNEUF RIVER							
Lower Pebble	5800	36	7.6	11/6	6.3	7.3*	
Pebble Creek	6550	48	7.2	11/6	4.3	4.4*	
LITTLE LOST RIVER							
Bell Mountain Bar	6640	18	3.6	11/28	1.1	2.0	
Big Flat	7050	18	3.6	11/28	1.1	1.1	~-
Cedarville Bar	5400	18	3.0	11/28	0.9	1.0	
Fairview Guard Station	5850	42	7.6	11/28	4.5	4.3	
West Big Flat	6550	18	3.2	11/28	1.0	1.0	

^{*}Spring Measurements.

^{1/} Determinations of soil characteristics and soil density for Idaho stations provided by Claude Pair and David E. Miller, Agricultural Research Service.

VALLEY PRECIPITATION 1/

Division Averages and Departures In Inches

DRAINAGE		Fall Nov. 1962	Winter December 1962		
DIVISIONS		Departure 3/	The second secon	Departure 3/	
Kootenai, Canada & U. S.	6.91	+0.89	2.80	-0.26	
Flathead	5.19	-0.02	1.83	-0.27	
Clark Fork	3.79	+0.89	0.70	-0.30	
Pend Oreille-Spokane	10.30	+1.47	3.30	-0.82	
Upper Snake	3.00	~1.83	0.60	-1.88	
Snake River Plain	1.66	-0.44	0.40	-0.61	
Salmon-Payette-Boise	6.88	+2.17	1.42	-1.34	
Clearwater	9.60	+2.90	2.65	-0.42	
Southeastern Oregon	7.14	+1,24	0.65	-0.67	

^{1/} Preliminary analysis by U. S. Weather Bureau from data furnished by Meterological Service of Canada and U. S. Weather Bureau.

^{2/} 15-year (1943-1957) division average.

^{3/} Departure from 15-year (1943-57) drainage division average.

Wons				CURRENT INFORMATION PAST RE				RECORD
DF	DRAINAGE BASIN and SNOW COURSE				SNOW DEPTH	WATER CONTENT	WATER CONTENT (Inches)	
	NAME	NO.	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	AVERAGE b

113112	1				(menes)	LAST TEAR	AVERAGE					
	UPPE	R COLU	MBIA DR	AINAGE								
PRIEST RIVER												
Benton Meadow Benton Spring	16A2 16A3	2344 4900	12/31 12/31	0 23	0.0 5.9	6.0 12.8	3.1 9.1					
SPOKANE RIVER												
4th of July Summit Lookout	16B3 15B2	3100 5250	12/28 12/28	T 33	T 9.0	7.2 22.9	 16.4*					
SNAKE RIVER BASIN												
MUD LAKE DRAINAGE												
Camp Creek Kilgore	12E3 11E12	6800 6200	12/28 12/28	11 9	2.2	5.0 6.1	4.2* 4.6*					
HENRY'S FORK - TETON R	IVER											
Big Springs Island Park Pine Creek Pass State Line Teton Pass Valley View	11E9 11E10 11F2 11F1 10F13 11E8	6500 6315 6750 6400 8500 6500	12/30 12/30 12/27 12/27 12/27 12/30	15 14 10 9 23 21	3.2 3.0 1.9 1.9 5.8 4.7	13.5 10.2 8.4 8.1 18.3 9.0	8.2 6.3 6.6* 16.3* 5.8					
SNAKE RIVER - Raft Riv	er, Goo	se Cre	ek, Salı	mon Fall	s Creek,	Bruneau	River					
Badger Gulch Bear Creek (A) Bostetter R. S. (A) Boy Scout Camp (A) Cedar Creek (A) Clear Creek Mdws. (A) Deadline Goat Creek (A) Howell Canyon Hummingbird Spgs. (A) Magic Mountain Pole Creek R. S. Red Point (A) Summit Springs (A)	14G3 15H1 14G1 13G2 14G5 13H2 14G4 15H13 13G1 15H15 14G2 15H14 15H18	7000 9050	12/27 12/31 12/31 12/31 12/31 12/31 12/28 12/31 12/27 12/31 12/28 12/28 12/31 12/31	0 12 9 17 8 17 12 10 13 12 9 14 4	0.0 2.9 1.8 3.8 1.7 4.1 2.4 2.4 2.9 2.9 2.5 3.4 1.0	3.7 13.4 13.0 5.8	7.1* 7.6* 8.2* 6.6* 9.0* 7.8* 7.8*					
Vi Pont (A) Wilson Creek (A)	13H3 15G2		12/31 12/31	8	1.8 1.5	11.9						

⁽b) 1943-57, 15 year period. # Not located directly on this drainage. * Estimated 1943-57, 15 year Average.

(A) Aerial observation: Water content estimated.

SNOW			CURRENT INFORMATION PAST RECORD				CORD
DRAINAGE BASIN and SNOW COURSE		DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONTENT (Inches)		
NAME	NO.	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	AVERAGE b
LITTLE LOST RIVER							
#Borah (A)	13E8	8250	1/2	8	1.6		
Fairview Guard Sta.	13E5	5850	12/27	T	T	1.8	2.6*
Lost-Garfield	13E3	5700	12/27	0	0.0	2.0	2.0*
Moonshine	13E6	7250	12/27	10	2.0	5.2	6.1*
Sawmill Canyon	13E4	6000	12/27	8	1.5	4.2	4.2*
Wet Creek Summit	13E7	8175	12/28	11	2.2	5.0	4.9*
BIG LOST RIVER							
White Knob	13F1	7700	12/26	10	2.0	2.4	3.4*
BIG WOOD RIVER							
#Couch Summit (A)	14F10	7000	12/30	20	4.9	11.1	
Dollarhide Summit (A)	14F8	8620	12/30		6.9	12.8	13.0*
Galena	14F1	7500	12/28		5.0	10.5	7.6*
Galena Summit	14F12	8795	12/28		6.1	12.7	9.5*
Graham Ranch	14F5	6200	12/26	14	3.3	7.4	6.5
Mount Baldy	14F9	9000	12/26	19	4.7	10.2	9.6*
Soldier Rgr. Sta.	14F11	6100	12/29	11	3.4	6.4	
Little Wood River							
Garfield R. S.	13F4	6554	12/27	12	2.5	4.6	4.4*
Muldoon	13F5	6300	12/27	13	2.6	4.3	3.1*
Porcupine (A)	14F14	8350	12/30	37	9.1	9.2	
Swede Peak (A)	13F9	7500	12/30	21	5.2	7.6	
BOISE RIVER							
			10/00				
Atlanta Summit (A)	15F4	7500	12/29		6.7	18.8	13.4*
Bad Bear	15F2	5500	12/30		T	9.6	10 74
#Bogus Basin	16F2	6120	12/31		2.3	13.3	10.7*
Bogus Basin Road	16F4	5360	12/31		0.0	3.0	1.7*
Couch Summit (A)	14F10	6950 8620	12/30 12/30	20 26	4.9	11.1 12.8	13.0*
#Dollarhide Summit (A) #Galena	14F8 14F1				6.9 5.0	10.5	7.6*
#Galena Summit	14F12	8795 8795	12/28		6.1	12.7	9.5*
Little Camas Flat (A)	14F12	4950	12/29		0.0	12./	9.5
Long Tom (A)	15F12	4550	12/29	0	0.0		
Moores Creek Summit	15F1	6100	12/29	12	3.2	17.4	14.2*
#Mount Baldy	14F9	9000	12/26	19	4.7	10.2	9.6*
Prairie (A)	15F6	5600	12/29	0	0.0		
				100			

⁽b) 1943-57, 15 year period. ** Not located directly on this drainage. ** Estimated 1943-57, 15 year Average. (A) Aerial observation: Water content estimated.

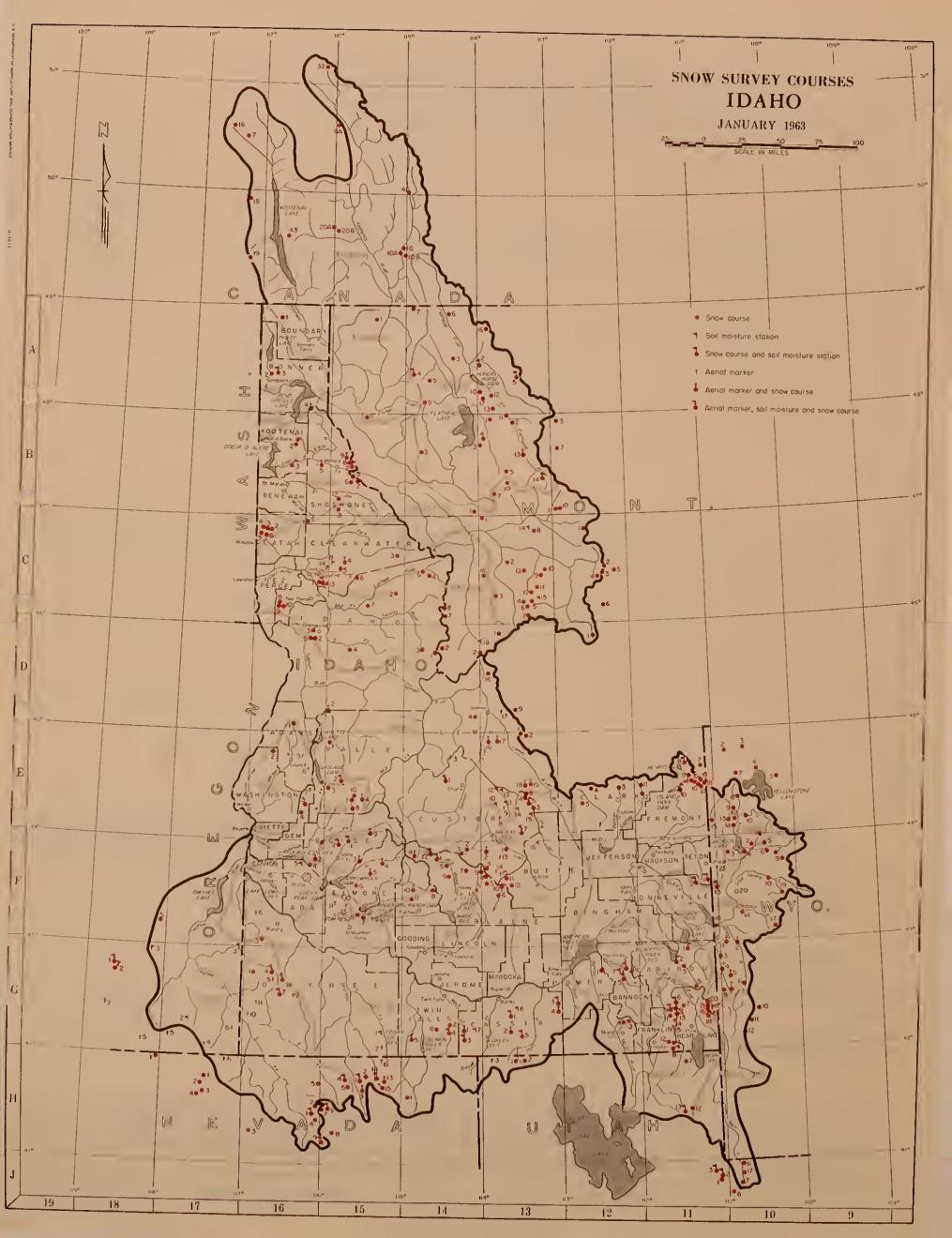
SNOW	CUF	RRENT INFORMA	PAST RE	ECORD			
DRAINAGE BASIN and SNOW COURSE			DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONTE	INT (Inches)
NAME	NO.	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	AVERAGE b
#Soldier Rgr. Sta.	14F11	6100	12/29	11	3.4	6.4	
Road Creek (A)	15F3	6800	12/29	T	T		
Trinity Mountain (A)	15F5	7400	12/29	35	9.3	21.3	16.6*
Willow Creek Cabin (A)	15F11	4710	12/29	0	0.0		
OWYHEE RIVER							
#Bear Creek (A)	15H1	7800	12/31	12	2.9	8.1	7.1*
Big Bend	15H4	6700	12/27	T	T	3.3	3,3*
Fry Canyon	15H7	6700	12/27	T	T	3.5	3.1*
Gold Creek	15H5	6600	12/27	Ť	Ť	2.5	1.9*
Lower Jack Creek	16H1	6800	12/27	T	T	1.8	1.1*
Rodeo Flat	15H6	6800	12/27	T	T	2.5	3.3*
Silver City	16F3	6400	12/30	3	0.8	8.1	6.6*
South Mountain	16G1	6340	12/28	2	0.4	3.7	5.2*
			12/27	0			
Taylor Canyon	15H9	6200	•		0.0	1.8	1.8*
Tremewan Ranch	15H8	5700	12/27	0	0.0	T	0.7*
Upper Jack Creek	16H2	7250	12/27	T	T	4.8	3.5*
PAYETTE RIVER							
n: - G 1- C	1570	6600	10/00	27	10 /		
Big Creek Summit	15E2	6608	12/28	37	12.4	10.0	10 74
Bogus Basin	16F2	6120	12/31	10	2.3	13.3	10.7*
Cozy Cove	15E8	5900	12/28	6	2.1	10.9	7.0*
Crawford Rgr. Sta.	15E3	4800	12/28	0	0.0		
Deadwood Airstrip	15E10	5440	12/28	6	2.1	10.1	7.1*
Deadwood Dam	15E7	5500	12/28	8	2.9	10.4	7.9*
Deadwood Summit (A)	15E4	7000	12/28	58	19.4		
Greenfield Flat (A)	16E7	7370	12/31	37	12.4	***	
High Valley Summit	16E4	5170	12/28	T	T		
Moores Creek Summit	15F1	6100	12/30	12	3.2	17.4	14.2*
Rock Flat Summit	16E1	5200	12/28	9	2.1	10.6	8.0%
Squaw Meadow (A)	15D2	5800	12/28	38	12.7		
Tripod Summit	16E3	5200	12/28	T	T		
WEISER RIVER							
Boulder Creek	16D1	5500	12/26	19	5.1	14.1	
#Greenfield Flat (A)	16E7	7370	12/31	37	12.4		
Mica Ridge (A)	16E6	6800	12/31	37	12.4		
Squaw Flat (A)	16E5	6230	12/31	37	12.4		
SALMON RIVER							
Above Gilmore (A)	13E19	8200	1/2	16	3.2		
Big Creek Summit	15E19	6608	12/28	37	12.4		
Borah (A)	13E8	8250	1/2	8	1.6		
boran (A)	1350	0230	1/ 4	U	1.0		

⁽b) 1943-57, 15 year period. ** Not located directly on this drainage. ** Estimated 1943-57, 15 year Average. (A) Aerial observation: Water content estimated.

SNOW	CURRENT INFORMATION			PAST RECORD			
DRAINAGE BASIN and SNOW COURSE			DATE OF	SNOW DEPTH	WATER CONTENT	WATER CONTE	ENT (Inches
NAME	NO.	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	AVERAGE
Boulder Creek	16D1	5500	12/26	19	5.1	14.1	
Chapman Creek	16D2	4215	12/31	0	0.0	4.0	1.4
Copes Camp (A)	13E17	7500	1/2	12	2.4		
Deadwood Summit (A)	15E4	7000	12/28	58	19.4		
Galena Summit	14F12	8795	12/28	23	6.1	12.7	9.5
Johns Creek	16D3	3805	12/31	0	0.0	3.6	1.0
Meadow Lake (A)	13E18	9100	1/2	36	9.5		
fill Creek Summit (A)	14E1	8870	1/2	23	6.1		
Pahsimeroi (A)	13E9	7600	1/2	1	0.2		
Rock Flat Summit	16E1	5200	12/28	9	2.1	10.6	8.0
Schwartz Lake (A)	13E16	8500	1/2	18	3.6		
Win Peaks	14E3	9190	1/2	21	5.6		
Whitebird Summit	16D5	4390	12/31	T	T	6.1	2.2
LEARWATER RIVER							
Above Greer	16C11	1240	12/31	0	0.0	T	
Cayuse Airstrip	15C3	3700	12/28	T	T	11.5	3.:
ish Lake Airstrip	15C2	5000	12/28	32	11.5	27.6	17.4
reer Summit	16C13	3000	12/31	0	0.0	3.3	
lidway	16C12	2200	12/31	0	0.0	1.8	
Pierce Rgr. Sta.	15C5	3171	12/29	T	T	8.8	5.2
ALOUSE RIVER							
Crumarine Creek	16C6	3500	12/29	T	T	6.1	2.3
ast Twin	16C3	4000	12/29	T	T	9.9	5.3
loward Creek	16C5	3500	-12/29	T	T	3.6	2.1
loscow Mountain	16C2	4800	12/29	4	1.0	12.0	7.1
Vest Twin	16C4	4200	12/29	T	T	8.2	4.0
	BI	EAR RIV	ER BAS	<u>EN</u>			
ONTPELIER CREEK							
iveout	11G16		12/27	7	1.4		
ittle Beaver	11G20	7000	12/27		1.8		
Montpelier Creek Miskey Flat	11G18	6600	12/27 12/27	4	1.0		

⁽b) 1943-57, 15 year period. # Not located directly on this drainage. * Estimated 1943-57, 15 year Average.

(A) Aerial observation: Water content estimated.



Index to IDAHO SNOW COURSES

		XIIG	CA to IDIXIIO	0110 11 000====			SEC. THP HGE, SLEY,
NO. STATE NAME	SEC. TEP. HGC. SUSY.	I NO. STATE WAME	SEC. TOP. HOL. ELEV.	I NO. STATE HAWS	55C; THP, RG1, TLEV.	NO. SIAIC NAME	46
		1	9.0		tal, eno tomo.		Let. And Long.
	LAT. FED LONG.		EAT, AND LONG,		[41,	SALMON RIVER	
KOOTENAI RIVER				BIG LOST RIVER	24 SN 21F M600	13El9A I Above discre	13 13¶ 26E P279 25 .1¶ 23E ~~~
1531: M Baree Creek LUALN M Brush Creek	36 26N 31N 5500 13 33N 26N 5002	10E3 WY Carron 10E7 WY COC Carr	44°44' 110°30' 7750 9 29N 118N 2500	13F3 Bear Canyon 13F13a Cherry Creek Pase	7 5N 23K 8900	1)Mila 7 Big Flet 2 Borch	2 10M 23E #21
16 RC /engusem	50°40' 11′°29' 2900	1005A WY Cottonwood Lake	25 31N 11EV 750	13F2A I Copper Basin	24 6N 21E 2000	13PMa 1 Cherman Greek	16 298 28 2216
10 EC Farnie	~9°31' 115°01' 3500 50°33' 117°17' 6000	10EIn WY Coulter Greek	77,003, 110,033 A600	13F11 1 Iron Bog	23 IN 22E 7657 34 4N 23E 6800	13ELTA : Cope Camp	20 224 208 PM
T PO Derpard AJ PO Draw Creek	50°33' 117°17' 6000 40°7" 116°41' 5100	10314 WY Dendman Ranch 10317 WY East Rim Divide	26 34N 116W 6534 32 37N 111W 7950	13F12 1 Loadbelt 1AF3A 1 Loat Wood Divide	19 68 19E 875	13D17e 1 Sertson Creek	1 85 ,40 P,02
009 95 Finberley	49°41' 11;°59' 3800	10F6 WY Four Mile Meadows	35 £5N 112W 7770	14F15m I North Fork Headov	20 7K 18E 819 17 4N 22E 8640	1309 M Johns Creek	9 29H RE 3005
32 BC Marble Canyon 10B BC Morrisser Ridge	51°12' 116°09' 5000 49°27' 115°0' 6100	10E13 NT Glade Creok 10718 NT Greye Boundary	12 488 116W 7200 35 37N 118W 5800	13Flam I Slickrock 14F2A 1 Stickney Mill	9 68 19E 7500	13El M Lenhi Foos). 125 2.E
19 N Welson	"dos2, 113,617, 3020	10719 WY Grow Vontre Summit	36 408 111W 8750	13F15a I Twin Rocks	22 4M 20E 8100	13E13m 1 Lower Big Flat 13E10m 1 Mabagany Bar	1 . N 23E 7000
10A BC New Fernie 15Al M Red Mountain	49°30' 115°02' 4100 4 363' 20' 6000	1003 WY Grover Park Divide	27 33N 118M 7500 32 48N 115W 7300	13F1 I White Knob	25 7N 23E 7700	11218A 1 Hendow Lake	24 13H 26E 315
16 BC Sandon	78-28, 171-17, 3200 7 500 500	10E14 Wy Huckleberry Divide 10E1 WY Lake Camp	32 488 115W 7301 44°34' 110°24' 7850	BIG WOOD RIVER	16 3N 15E 8620	12004 1 Hill Creek S.mit	8 13% 17E 6477 2. 4 26 27% 21E 6200
th BU Sinclair Page	50°40' 145°58' 4500	1059 WY Lewis Lake Divide	44°13' 110°40' 7900	14F8A I Doller Hide Summit	16 3N 17E 8020 9 6N 15E 7300	13016 1 No se Free 13Eye 1 February	7 10% 24E 0366
1631 I Smith Creek 204 BC Sullivan Mine	29 643 34 4870 49°43' 116°01' 5100	1074 WY Moran 1073 WY Moren Bay	8 6 17 458 1148 6800 14 458 1168 6800	14F1M I Gelena 14F12M I Gelene Summit	33 7H 15E 87+5	13816A 1 Schwar's Lase	34 22E 8500 15 111 *****************************
41 BC Opper Elk Silver	5001' 11.056' 4400	1075 at North Bag	44°44' 110°42' 7500	14F5 1 Graham Ranch	10 5H 17E 6200 8 4M 20E 7900	13F2 M Troil Greek	15 1.6 1;; 77%; 28 158 17E 9190
LLAT M Weasel Divide	8 37H 24W 5450	1006 WY Poison Meadows	29 30N 116W 8500	14F7 1 Mascot Mine 14F9 1 Mount Baldy	26 48 17E 9900	1/F/A I Vienne Mine	32 • N 14E 8900
PRIEST RIVER		1008 WY Salt River Summit 10ED? WY Snake River Station	32 PAN 118W 7900 9 48N 115W 6780	14F11 I Soldier Ranger Station	19 2M 14E 6100	13EDs 1 West Ig Flot	35 124 23E 6550 -7 248 28 43 50
1642 I Senton Meadow	20 58N 4W 2344	1.F20 WY Snow King Mountain #3	4 40N 117W 760	LITTLE WOOD RIVER		1/19 I whitebird Same'	34 218 208 7800
16A3M 7 Benton Spring	30 58N 3N 4900	10E5 WY Sylvan Pass 10E7 WY Thumb Divide	12 52N 110W 7100 44°22' 11'*35' 7900	13FAN 1 uarfield Ranger Station	11 JN 21E 6354	CLEARWATER RIVER	
FEND OREILLE - CLAR	K FORK RIVER	10F9 WT Togvotee Pass	23 448 110W 9600	13F10 I lron Mine Greek	32 3N 23E 6370 25 3N 21E 6300		in 35% 2E 1245
13013 M Eleck Pipe	23 FY 15V ~100	13F5 MY Turpin Meadova	14 458 112W 6930	1375 I Huldoon 14F13m I Niggerhand	26 2W 27E 145	16011) Abrie Feer 16014m I Brism	11 35W 3E 3100
1205 X Chessman Reservoir	2 8N 5W 6270 1 15N 9W 5T00	10710 WY Yellowjacket	33 428 1134 7675	15714s 1 Forcupine	30 4M .DE 835	1073 1 Coyuze Alrerrip	383 118 3700
12510 M Copper Creek 12511 M Cotter Hibe	1 15N 9V 5T00 2 15N 9V 625	HENRYS FORK RIVER		13F9A I Swede Prek 13F6 I Telfer Bunch	12 2W 22E 6000	1 1902 I Fish Lake Airstrip	37 338 8E 6200 35 354 11E 5000
1JB10 K Coyote Hill	12 16N 16W 4000 23 8N 12W 7800	11E9 : Sig Springe 11ERS I Black Centron	34 14M 44E 6500 11 13M 45E 7850			15/30 1 F bl	16 35% 5E 3150
1309 M El Torado Mine 13011 M Frei Purr Pass	23 8N 12W 7600 12 6N 17W 8000	11819 ! Black Moose	33 14N 45E 8135	BOISE RIVER	29 3M 10E 150°	16C / reet	1 32% % 45% 6 43% 58 5000
19015m W. George town Lake	6 5N 174 645.	10EL5 WY Grassy Lake 11ELO 1 Island Fark	6 48N 11TW 723 79 13N 43E 6315	15FPH Pad mar	35 7N 6E 550	15%3 1 F rty-nine Meadows 16013 I weer Jummit	5 43% 5E 5000 13 35% 2E 3000
13030 M Golf Greek Lake 1501 M Edoždo Greek	14 88 10W 7200 9 14S 27W 6200	11E16 I Lathan Springs	9 138 458 7650	15F" 1 Benness Hountain 16r4 f Bogus Basin Road	7 .8 7E 6050 32 5N 3E 5360	1406 I hemi x Butto	12 36% EE 5500
198. M Intergaard	6 58 134 6450	llELt 1 Licky Pog	2 13N 45E 6900 12 13N 44A 7450	16rt f Bogus Essin Road 16rts f Bogus Essin Road	36 58 2£ 4830	1203 , Fit Carson Pasture 1205 H Lolo Pass	4 27% 16F 4700 1. 1 % 24% 5230
1908 M Lubrecht Forest 190142 M Lubrecht Forest	11 138 14V 4010 11 138 45V 4100	11E17 : Poscher's Cabin	11 13N 45E 6000	15Ffm 1 Comme Creeke Divide	11 75 4E 577 0 2W 14E 695	1608 I F ann	20 338 38 2300
1337 M North Fork Joeko	3 179 179 6330	11ES 1 Valley View	7 15H 44E 6500	12Fl M I Couch Samult 15Fl m I Danakin	9 2H 1AE 695 17 1H 9E 1±50	16012K I Millsey	1. 35Y 2L 2200
1201 M Pipestone Pass 19012 M Red Mot	10 18 TV 7200 27 68 134 7100	11E7 M West Yellovetone	34 138 5E 6700	16F1 I Deadman sulch	24 78 38 6500	1401 M Hesperos Pass 1924 I Origrande Mountain	21 15 214 6571 24 274 68 7800
1912 M Slide Rock Mountain	35 10% lew 7100	TETON RIVER		1578 1 Dixie Hill 1529A 1 Jeckson Pres	23 25 8E 2237 7 8E 9E 700	1505 . Pierre Ranger Stafion	2 30% SE 3171
1305 M. Southern Orosa	9 58 134 6500	10721a WT Darby Cangoo 11F2M 1 Pine Greek Pass	26 43N 118W 8253 24 3N 44E 6750	15E9A 1 Jeckson Poer 15Fl2a 1 Liftle Camps Flet	21 18 77 495	1406 i Fuell Ranger Station	33 3°Y LE 230 36 36Y 14E 6600
12:1 M Stemple Pass 1907 M Storm Lake	16 138 7V A900 19 4N 134 me)	liflE : State Line	24 3N 44E 6750 32 3N 46E 6400	15F13a 1 Long lon	19 1 3 8E 455	14" I Surege Pass 150.4 . Shanghei Summif	354 15E 6600 274 275 7
1306 M Stwart Mill	19 4W 13W 4512	10713H WY Teton Pass	24 41% 118W 850	15F1R 1 Hoores Creek Summit	19 7E 7E 6100 13 7Y 7E 5600	16C1 : Sweemay	32N % 4,35
1202 M Termile Greek, Lower 1203 M Termile Greek, Middle	1) 6M 6W 6250 13 8W 6W 6800	CAMAS - BEAVER CRE	EK	15F6 1 Prairie 15F3A I Road Creak	2 58 8E 6600	PALOUSE RIVER	
1201 H Tomile Greek, Upper	19 84 57 8000	11E1 1 Blue Ledge Mine	P7 13% 38E 6700	15F5A Trinity Hountain	7 3N 9E 7L00	160s I mmarine freek	1. L N FN 3500
1481 M TV Mountain	33 15% 19V 68%	12F3 1 Cemp Greek 11E12 1 Kilgore	21 13% 36g 6800 6 12N 39g 6200	157114 I Willow Creek Cabin	26 1M 6E 4710	1603 I East Nam	13 4 3 54 4000
BITTERROOT RIVER				OWYHEE RIVER		160° I ward 'reex 1602 l Must w Mountain	14 4 3 44 3500 18 4 3 44 4500
13016 M Arbrose	DZ 98 1EV 6475	MEDICINE LODGE CR		1006 I Antelope Ridge	45 1E 5900	16Ca 2 heef win	77 10H 65 550
1301 M East Fork Ranger Station	16 2W 17W 5400	12E4 1 Inving Greek 12E5 I Wabber Greek	8 13N 33E 7035 23 12H 32E 6700	1879 O Berron Welley 1557e 1 Battle Greek	26 279 32E 4200 15 118 1E 575	BEAR RIVER	
1352 M Gibbons Pass IJUNE M Sibbons Pass	4 25 194 7100		2, 21, 21, 3, 21	15MaX N Blg Bend	30 45H 56K 6700) '11 '7 ig Fare	2778 117W 2700
IJTISE M Sibbone Page 1407 M Los' Torse	4 25 19W 7100 5 4W 23W 5940	BLACKFOOT RIVER 1103 1 Austin Brothers Ranch	28 75 438 6450	1761 n O Siwe Mountain Face Besque 1661Ca) Bull Basin		11ull Christensen Ranch	27 1,33 4,18 5600
1/12 M Serperce Camp	19 1S 23V 5580	11628 I China fist	17 78 42E 63(0)	18Hl H Diseater Funk	29 125 63 5600 8 478 348 660	1 '2 I ab R.ver Barger Stati v	5 15 45 400
1303 M Saalkaho Simit 1408 M Tvin Lakes	30 68 174 7259 32 58 23V 6510	1105 1 Slug Creek Divid* 1101M 1 Sameen Ranch	10 10S 44E 7025	1862HA O Fish Creek 1862m O Folly Farm Scomite	4 333 337 *400	11H13MF Pry Bread Find 1 26H i Balgran' Summis	19 49 48 8230 21 125 4E 7350
water and the state of the stat	, ii 2, 2, 2, 2, 10		25 5S 43E ~200	16-77 K Fry Canyon	8 303 388 445 1 31 438 548 62	11 2 Saignet Campon mouth	24 12S E 6500
FLATHEAD RIVER		PORTNEUF RIVER		15.5 W Gold Treek	71 45% 568 6600	11589 : rar in Pavir 11879 - sandar 7 tyit	1 65 LIE 8000 35 1LW LE 7600
135144 M Basin Creek 1483 M Bassoo Paak	11 19N 12W 5000	1255M I Demphey Greek 1257m Y Lover Dempsey	17 108 388 6280 5 108 388 5210	17 % N Granite Peek 16 Pa i Syde Pasture	22 448 39E 7800 SEE 31 85 79 5800	107/ Coodman Run h	77 12W 22 000
14B) M Barsoo Phax 13F3 Y Big Creek	13 248 25W 5150 7 228 18V 6750	12062 I Lover Pebble	7 8S 38E 5800	16R4 W Jecke Pwak	28 42H 57E 84-1	103" U ayden F rk	1 15 98 9300
23A17 M Caxy Misery	30 28H 18W 6400	1251 I Mina Creek 1252M 1 Fubble Crosk	78 34E 6300 34 78 37E 6550	1763m O Jurdan Valley 1685 H Laurel Drew	2 308 44 8 4390	10012 by Yealy Runger Station 11817F R Mante Crieto R. S.	2009 1311 Pg. E1
1382M M Jesert Mountain 1384 M Fatty Greek	24, J1W 19W 5600 4 22W 1EW 5500		26 10 3/2 0773	1756a O Loukout Butte	20 45W 53E 6700 2 40\$ 47E 565	1051 · Piney Labarge z	19 748 11 ₄ V 8820
1227 K Goat Mountain	25 224 104 7000	RAFT RIVER		1764s O Louse Cenyon	27 LDS LE 640	10/179 U Stillwater amp 11-1 1 Strawterry Mink Divide	14 136 41E 6600
1449 M Oriffin Creez Divide 1443 M Hell Abaring Divide	11 28W 25W 5150 31 32W 22W 5770	1302A 1 Boy Scout Camp 13M2A U Cleor Creek Meadova	12 145 23E 7600 26 148 14W 9950	17R2 H Lover Buckskin 16HlM M Lover Jeck Creek	25 45N 39E 6700 18 42N 53E 6800	1104 1 Streuberry Creek	14 135 41E 6800 9 135 41E 5800
19913A M Holtmook	18 21N 13W 4430	13% I Conner Pass	35 128 25E 5700	17H3 H Martin Creek	18 44% 4 E 6700	116-P : Villey Flat	2 158 ATE 6170
LAS X ticherehn LAS X togan Creck	14 37N 22W 3886 34 30N 24W 4300	1351m 1 Howell Canyon 13F0 U One Mile Summi:	2 13S 24E 8000 19 14N 14W 7330	16H3 B Hidee 16G7M ; Had Flat	18 37% 46% 77:00 34 96 JW 55:0	MALAD RIVER	
13A5M M Marias Pass	34 30N 14W 5250	13GSX 1 Sheep Hollow	4 145 242 6200	1705e O Oregon Canyon	9 405 408 6940	12 mg Creek Flat	31 138 3°E 6355
13Alé M Mineral Creek 13Al3 M Quintonkon	29 35N 17W 4000 11 45N 17W 3800	1303X Sublett 1314A Sumit Springe	8 128 308 6000	1786s H Quinn Ridge 1601ts I Red Canyon	9 478 418 6300	1203 1 Caf rd Mountein	32 135 378 6800
13B2 M Spotted Bear Mountain	23 258 15V noon	1344) Summit Springs	15 133 DE 8500	15HER N Rodeo Flat	32 118 4W 6650 36 43W 53E 6800	MONTPELIER CREEK	
13A10 M Strawberry Lake 13B1 M Orlnous Lake	11 23 N 15W 6500 9 25 N 17W 6500	GOOSE - TRAPPER CR		16F3 1 Silver City 18hBA 0 Silvice	6 59 3V 6400	11016 i utre ut	35 213 458 6841
13Al2 M Trout Lake	21 28% 17% 3600	1403R 1 Badger Guleh 1404A 1 Bossetter Ranger Station	24 155 19E 6660 35 14S 19E 7500	16G1 1 South Mountain	35 328 338 6905 35 78 56 634	11017s I live > Pace 11019s Jens n Ran h	2 125 45E 7005 15 128 45T 65
13811 X Twin Creezs 1385 M Upper Holland	14 26W 16W 3580	1497m I Frapper Crook	35 14S 19E 7500 2 15S 20E 5300	1676a 1 Succor Creek 15874 N Taylor Cenyon	25 38 59 61 10	11000 I Little Beaver	15 123 45T 65 26 115 45E 6FG
1785 M Upper Holland 1283 M Wrong Ridge	28 20N 16W 7000 17 25N 10W 6800	13H3e U V1 Pont	17 14N 17V 7670	15H8 N Tremsum Ranch	35 39N 53E 6200 9 39N 55E 5700	11:16 I Houselier Creek 11:021 I Whiskey Flet	7. 17\$ 45E C5TO
		SALMON FALLS CR.	BRUNEAU RIVER	166AM 7 Triangle	16 25 78 36 514	***************************************	26 115 45E 6765
SPOKANE RIVER		15HIMA N Bear Greek	31 46H 38E 7800	1865a O Trout Creek 1781 H Upper Buckekin	10 418 36E 7800		
1588 1 Above Barke 1587 1 Above Roland	11 48H 5E 4100	1495A I Gedar Greek 1494B I Doadline	25 153 138 7000 25 145 18E 6950	16H2 H Upper Jack Creek	71 45N 378 7200 9 42N 53E 7250		
1505 I Selow Roland	35 478 6E 4350 34 478 6E 3770	15HD H Fox Creek	33 46H 58E 6800	1807a 0 "V" Lako	31 3545 32 3/48 6600		
1632 : Copper Ridge	6 9 7 50K 1V 4800	15H13A H Goet Creek 15H15A N Hummingbird Springs	31 46N 60E 8800 6 45N 60E 8945	PAYETTE RIVER			
1653K ! Fourth of July Summit: 1625£ ! Hellogg Feek	6 498 1W 3100 19 488 3E 5560	14K1 N Jakes Croek	6 42N 62E 7000	15EH I Big Creek Summit 16Fet 1 Bogus Resin	24 15N 4B 6608		
15EON 1 Lockeut	4 47N 6E 5250	1462 1 Magic Mountain 1561m 1 Patrica Hanch	14 143 18E 6700	1555 1 Gozy Cove	16 5K 3E 6170		
16F1 I Lower Sands Creek 16A4A I Mosquito Ridge	32 51N 1W 3400 5 54N 2E 5110	15HLAM II Pole Creok Ranger Station		1523 1 Crawford Ranger Station	19 118 7E 5900 21 148 4E 4800	Number	
15312 1 Outley Creek	19 44% 18 3750	15H18o H Red Point	15 47B 61B 7940	15E20 I Deadwood Airstrip 19E7 1 Deadwood River Dea	8 11H 7E 5240	Numbering System (Homple)
1505A I Roland Stomatt 1601 I Sherwin	26 478 62 5200	15834 H Seventy Six Creek 1466 1 Shoehone Beein	6 44M 58E 7100 24 143 17E 5740	15ELA 1 Deadwood Summit	8 11H "E 5295	1037 hos course outy	
1589A 1 Sunset	28 & 33 42H 1E 3200 28 49H 5E 5600	15G2a 1 Wilson Greek	24 143 17E 5740 24 169 12E 7500	10E'a I Greenfield Flat	23 14N 7E 7000 1 13N 2E 7370		6405
		LITTLE LOST RIVER		15El I lake Fork	9 13N 2E 5170	TOSTA SHOP COURSE AND ESCIAL MERSE	
SNAKE RIVER - WYON		13F16s 1 Cedarville Bar	31 78 288 5400	16El i Rock Flot Sumit	18N 4E 6000	SHOR COURSE, SOIL WOISTURE AL	2100 000 00000 00000
1054 WY Afton Ranger Station 1051 WY Arizona	30 32H 118V 6200 3 65H 115W 6850	13E5H 1 Feirview Guard Station	27 1211 268 6750	15F2A I Squaw Hendow 16E3 I Tripod Summit	5 21N 4E 9400	I COURTE, SOIL WOISINES AV	ATION AND PRECIPITATION GARS.
1012 W. Aster Creek	44°17' 110°38 7700	13E15m I Little Lost East 13E3 1 Lost-Garfield	36 11H 20E 6640	The state of the s	17 11H 3F 5200	TOUTO ATRIAL MARKET ONLY	
1072 WY Base Camp 1077 WY Blackrock	20 458 113W 6900 4 448 111W 8600	13E6 1 Hoonehine	31 13N 26E 7450	WEISER RIVER 16D1 I Boulder Crack		TOURS STORAGE PRECIPITATION GAGE ON	. 4
		1 12017 - T Management of Decay		Obuilder Lreak			
1002A WY Blind Bull	6 34N 115W 8750	13EL4m I Nielson's Draw 13EV 1 Saumill Capyon	26 11N 25E 6400	16E6a i Mice Ridge	15 20N 1W 5500		
1002A WY Blind Bull 10714 WY Bryan Flas		13EL 1 Sawmill Cenyon 13EFMA 1 Wet Creek Summit	17 12H 26E 6900 15 8H 25E 8175	16E6a 1 Mice Ridge 16E5a 1 Squaw Flet 16F2 1 Flecor Greak	15 20N 1W 5500 15 15N 7E 6800 12 17H 2E 6730		

Agencies Assisting with Snow Surveys, etc.

GOVERNMENT AGENCIES

Canada:

Department of Lands, Forests, and
Water Resources, British Columbia
Department of Resources and Development,
Water Resources Division

States:

Idaho State Reclamation Engineer
and Corps of State Watermasters
State of Idaho Department of Fish and
Game
University of Idaho
Idaho State College
Montana Agricultural Experiment Station
Montana State Water Conservation Board
Nevada Cooperative Snow Surveys
Oregon Agricultural Experiment Station
Oregon State Engineer and Corps of
State Watermasters
Utah Cooperative Snow Surveys
Wyoming Cooperative Snow Surveys

Federal:

- U. S. Army Engineers
- U. S. Department of Agriculture
 Forest Service
 Agricultural Research Service
- U. S. Department of Commerce Weather Bureau
- U. S. Department of the Interior
 Bonneville Power Administration
 Bureau of Reclamation
 Fish and Wildlife Service
 Geological Survey
 Indian Service
 National Park Service
 Bureau of Land Management

PUBLIC UTILITIES

The Montana Power Company Washington Water Power Company Idaho Power Company Utah Power and Light Company

ORGANIZED PUBLIC AGENCIES

Big Lost River Irrigation District
Boise Project Board of Control
Little Wood River Irrigation District
Jordan Valley Irrigation District
Salmon Falls Creek Irrigation Company
Twin Falls Soil Conservation District
Twin Lakes Irrigation Company
Big Wood Irrigation Company
Owyhee Project - North & South Board of Control

PRIVATE CORPORATIONS

Amalgamated Sugar Company

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